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Technology Deployment

IDAHO NATIONAL ENGINEERING AND ENVIRONMENTAL LABORATORY

INEEL

HOME OF SCIENCE AND ENGINEERING SOLUTIONS

Combination Passive Gamma/Neutron Probehole Log

Problem
INEEL's Radioactive Waste Management Complex (RWMC) Remediation project needed to determine the location and identity of neutron emitting contaminants (^{239}PU, ^{241}Am, ^{235}U) in buried waste sites without exposing workers to transuranic or hazardous contaminants.

Baseline Technology
No known in situ technology for simultaneous logging of gamma-ray and neutron emitting contaminants.

Innovative Technology
The Combination Passive Gamma/Neutron Probehole Log incorporated a high-resolution gamma-ray spectrometer and a neutron detector.

Comparison
Superimposed maps of passive gamma and neutron logs enables identification and location of transuranic materials.

Benefits
This combination tool enabled the RWMC Remediation project to simultaneously identify and locate gamma and neutron emitting contaminants so that the types and amounts of radioactive isotopes in the waste could be determined.

Project: ID-ER-106
Radioactive Waste Management Complex Remediation
Non-OST